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ABSTRACT

A computer software package has been developed to teach and test students on the Rules for Alphabetical Filing of the Association of Records Managers and Administrators (ARMA). The following computer assisted instruction principles were used in developing the program: gaining attention, stating objectives, providing direction, reviewing prerequisite materials, presenting information, providing practice, and assessing learning. The package was tested in a University of Nebraska-Lincoln office management course with 18 subjects randomly selected to use the computerized program with the ARMA publication Rules for Alphabetical Filing, while the control group studied solely from the publication. After 4 weeks, students were given a 40-problem test. Results showed no significant mean score difference between groups, but the experimental group spent an average of 2 2/3 hours learning via the computer and 2 1/2 hours studying from the text, while the control group spent an average of 4 hours studying. Based on field testing and review at the secondary, community college, and university levels, revisions have been made and a separate testing program has been developed. This report includes a three-item reference list, six figures, outline summaries of the instructional and testing programs, and a list of system specifications and requirements. (LMM)

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TEACHING "FILING RULES"--VIA COMPUTER-AIDED INSTRUCTION

By Craig Agneberg

Knowledge of the "Rules for Alphabetical Filing (1)" are necessary for anyone in the field of records management. All personnel who use files of any type--files for paper records, files on microfilm, or files in magnetic memory--need to be able to flawlessly "file and find". Whether it is a quick search through one filing cabinet, a search through the many files of a large corporation or government agency, a need to retrieve a sheet of microfiche from a file of thousands, or the use of a records index on a word processor or computer terminal, knowing the "rules for filing" is invaluable preparation for all kinds of information storage and retrieval. To file and find, it is necessary to use standardized "rules for filing".

Filing rules have traditionally been taught in two ways. One approach is to have a teacher review the rules and then have students practice the rules by working through exercises. This first method is often coupled with the second approach which utilizes a filing rules practice set. Practice sets provide practice and simulate a realistic office environment.

Oftentimes filing rule practice sets are time consuming (for both teachers and students), confusing, costly, and are regarded as "busy work." Most students learn the filing rules by simply memorizing them and then practicing them in problem situations. With today's changing office technology, it's time that computers be used to help in the teaching process. Filing rules lend

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themselves to computerized instruction in much the same way we are currently teaching them in the classroom--by drill and practice. "Any subject area in which a stable body of content needs to be learned through repetitive associations is amenable to development as a drill and practice package." (2)

The Instructional Program

Two computer programs have been designed by two business educators at the University of Nebraska-Lincoln to aid teachers and students in learning and testing the filing rules. The filing rules incorporated into the program are the Rules for Alphabetical Filing published by the Association of Records Managers and Administrators (ARMA). A goal of ARMA is to eventually standardize the filing rules used in offices. With this goal in mind, secondary and post-secondary institutions using these new computer programs can now teach the ARMA rules via computer aided instruction (CAI).

This CAI program has been designed by educators for use in educational and business situations. When developing the program, they adhered to seven CAI instructional procedures: (1) gaining attention, (2) stating objectives, (3) providing direction, (4) reviewing prerequisite material, (5) presenting information, (6) providing practice, and (7) assessing learning. The features of the filing rule "teaching" program as they pertain to these seven procedures follows.

Gain Attention. Students are provided with the title and the relevancy of the program through the use of graphics, sound, and

their own interaction with the computer. The computer interacts with the students and uses their first name when responding to them.

State the Objective. General objectives have been developed for the entire computerized filing rules program. Specific objectives for each section of the filing rules are given as the student begins each section. One objective states that "students should be able to correctly answer at least 90 percent of the test questions" given on the final test at the end of the "instructional" program.

Provide Direction. The program assumes that the student knows nothing about microcomputers. Specific instructions are given throughout the program to help students understand what is required. Throughout the entire program, the computer instructs the students which keys to press to access needed information. Figure 1 illustrates the main sectional menu used throughout the program and what the student needs to type to access certain sections of rules.

Figure 2 illustrates the menu to section number one of the rules. Students are allowed to choose which rules they would like to study. However, for first-time students it is suggested that they follow the predetermined pathway which leads them through the rules in a logical progression. For easier reading, each time the student chooses to review the instructions the computer slows the screen output so that the letters appear at a slower pace. This allows the student time to sit and read the instructions. After working through the instructions and instructional program once,

MAIN MENU
ARMA FILING RULES

1 = INDIVIDUAL NAMES

2 = BUSINESS NAMES

3 = GOVERNMENTAL/POLITICAL NAMES

4 = MISCELLANEOUS RULES

SELECT (1 TO 4)

FIGURE 1

SECTION ONE - INDIVIDUAL NAMES

1 = SIMPLE NAMES

2 = NICKNAMES

3 = NAMES WITH PREFIXES

4 = HYPHENATED NAMES

5 = TITLES AND DEGREES

6 = GUARDIANS, RECEIVERS, ETC.

7 = FOREIGN NAMES

8 = SEE MAIN MENU

9 = END PROGRAM

SELECT (1 TO 9)

FIGURE 2

the students will know how the program functions and will have to refer to the rules only minimally hereafter.

At the beginning of each section of the filing rules, the students have the option of seeing the objectives and instructions if they so desire.

Review Prerequisite Material. At the beginning of the program, students are asked whether they have read the introductory pages of the ARMA publication Rules for Alphabetical Filing. If they have, they will continue with the instructions. If they haven't, they are temporarily directed out of the computer program with specific instructions to read the pages indicated.

Present Information. From the main menu (Figure 1) the student will be lead to the section of their choice. The sectional menu, which delineates each of the individual rules in that section, will appear on the screen. Students are instructed to select a rule. First-time students are instructed to follow the rules beginning with section one and ending with section four.

Each rule is displayed followed by examples of the rule directly below it. The example displays the names first as they are normally written followed by the same names listed in their appropriate filing sequence (Figure 3). After studying a rule and example, students are given a three-name problem. They must arrange the numbers of the names in the order they should be filed (Figure 4). If the students successfully input the numbers and solve the problem, they are praised and are then asked to continue to the next rule--or to exit to the sectional menu.

If the students input the numbers of the names incorrectly, the

RULE 1

SIMPLE NAMES

NAMES OF INDIVIDUALS ARE TRANSPOSED. THE SURNAME IS THE FIRST FILING UNIT, FOLLOWED BY THE FIRST NAME OR INITIAL.

AS WRITTEN:	AS FILED:
CARL S. BROWNE	BROWNE/CARL/S
F.S. BROWNING	BROWNING/F/S
FRANK P. BROWNING	BROWNING/FRANK/P

PRESS 'RETURN' TO CONTINUE

FIGURE 3

```
TYPE THE NUMBER OF EACH NAME IN THEIR
PROPER FILING ORDER.  HIT 'RETURN'
AFTER EACH NUMBER.

1.  ANNA J. ROSE
2.  A. JANE ROSE
3.  ANN ROSS

ANSWER?
?3
?1
?2
```

FIGURE 4

rule will then again appear on the screen repeating the same example. Students are given the same problem and are asked to input the numbers of the names again. If correct, they are praised and will then continue or exit the program. If incorrect a second time, the computer will list the names and numbers in their correct filing order so that students may find their mistake(s). They will then continue to the next rule or exit to the section menu.

Provide Practice. Practice is provided after each rule is presented. Additional drill and practice can be provided by worksheets distributed by the teacher or available aside from the computer.

Assess Learning. Upon completion of all the sections in the program, students access the "testing" program on a separate diskette available from the teacher. The "testing" diskette allows each student to take up to three different 40-problem tests which encompass all the rules previously learned on the instructional program. The "testing" problems follow the format previously used on the instructional diskette. (A detailed description of this important classroom management tool is given later in this article).

Research Conducted

This computerized method of teaching the filing rules is very effective. The computerized drill and practice program has advantages which are important in training students for work in offices.

A research project conducted by Mellanie Herbert, utilizing

computerized drill and practice to teach punctuation rules, led her to conclude that:

> Equal student achievement results through microcomputer-assisted instruction have encouraged examination of many other variables of this instruction. Several of these considerations are (1) computer familiarity and student self-confidence in operating computer, (2) pleasureable learning experiences to potentially increase motivation, (3) the saving of class time as well as teacher's paper grading time, (4) flexible schedules for absence makeups, and (5) individualized instruction for different learning abilities and goals." (2)

This computerized method of teaching the filing rules has proven to be effective. The instructional program was used as an action research project, by the author, in an Office Procedures (Office Management) course at the University of Nebraska-Lincoln during the Fall semester, 1982. Of the 36 students in the course 18 were randomly selected to use the computerized program coupled with the ARMA publication, Rules for Alphabetical Filing. The control group studied solely from the publication. Both groups were given a form to record their time spent in studying for the test. The students were given four weeks to complete their studying and were then given a 40-problem test. Results of the test showed that there was no significant difference between the control and experimental groups in terms of mean score. The experimental group spent an average of 2 2/3 hours learning via the computer and 2 1/2 hours studying from the text. The control group spent an average of 4 hours studying from the text.

The University of North Dakota-Grand Forks has utilized an individualized approach to teaching the ARMA filing rules for several years. A slide series was developed that follows a similar

procedure used in the computerized program. In-class time is then spent teaching other fundamentals and applications of records management. The filing rules are learned on the students' own time, and they are tested as a group during one class period. Students must achieve at least a "C" grade on the exam (90 percent). They may retake similar exams several times if needed either to achieve a C grade or to better their grade from a C to a B or an A.

Field-Tested

The computerized filing rules programs have been field tested/reviewed at the secondary, community college, and university levels. The program has been changed based on these student and teacher evaluations.

The Testing Program

When the original instructional program was first designed, the testing was to be done during one class period as a group. Because students learn at varying rates, because of the competency-based nature of the grading, and because the computer is more efficient in handling detail, a testing program was developed. Further investigation by the author led to the following CMI (Computer Managed Instruction) program being developed for the benefit of both the teacher and the student.

The Student Menu. the students benefit from the testing program in that they can take the test over the rules when they are ready. Just as in the teacher-administered situation, the student

is only allowed to retake the test two more times. But instead of the teacher managing the student grades and retakes, the computer manages this administrative detail.

The main menu of this program appears in Figure 5. The first choice lets the student take/retake the 40 problem filing test. Testing will be completed only upon the successful entry of the student into the program--via their own security code (name and number). Instructions for taking the test are included at the beginning. If they want, the students may choose either to review the instructions and grading plan or enter into the test. Before reaching the test, the students will be shown their score(s) on previous attempts and will be reminded of the minimum compentency needed as well as how many tests they have left to meet the minimum score.

The test is designed exactly like the problems presented in the instructional program (see Figure 4). However, students must work through the entire 40-problem test before receiving feedback on their numerical and percentage scores. If any problem(s) are answered incorrectly, they will be brought to the screen for the students' review. The student will be allowed one more look at their test score(s) before ending the program.

A test bank of 160 different problems is included on the diskette. The program is designed to randomly select 40 different problems.

The students must see the instructor if they haven't reached the minimum (90 percent) competency in three tests. The program will not allow access to the test if they've taken three tests.

ARMA FILING RULES TEST

1 = TAKE TEST

2 = SEE GRADES

3 = END PROGRAM

SELECT (1 TO 3)

FIGURE 5

The Teacher Menu. To utilize the teacher-related features of the testing program, the teacher must select "4" on the main menu (Figure 5). This will bring the teacher into a "password" situation. This security system allows the teacher to enter a six item alphanumeric code. The program allows two chances to enter the correct password. After that the program will end.

Upon successful entry of the password, the teacher will see the following menu (Figure 6). A brief description of each menu function follows. The "create student file(s)" section gives the teacher the opportunity to construct a file for each of the students who will use the CMI testing system. This section also gives specific instructions to the teacher in developing these files.

The second menu item, "read student file(s)", allows the user to verify or read one or all student's file(s).

For security reasons the third menu item, "change password" is included. It is recommended that this be changed frequently in order to keep the student files accessible to only the teacher.

Option four from the menu allows the user to print individual student scores or all student scores. The format for output is in report card style giving the name, student number, date, test scores, final percentage grade, and final letter grade. This output can be given to each student or can be used as a backup to the diskette.

"Deleting student file(s)" allows the teacher to clear the diskette for the entry of new student names.

The sixth option, "change test", gives the teacher access to

TEACHER SELECTIONS
****

1 = CREATE STUDENT FILE(S)

2 = READ STUDENT SCORE(S)

3 = CHANGE PASSWORD

4 = PRINT STUDENT SCORE(S)

5 = DELETE STUDENT FILE(S)

6 = CHANGE TEST

7 = RETURN TO TEST MENU

SELECT (1 TO 7)

FIGURE 6

the 160-problem test bank and allows them to change any or all of them.

Option seven simply allows the user to return to the main (3-item) menu that the students access.

Curriculum Considerations

The main objective of the ARMA Filing Rules Program is to teach the student a standardized set of filing rules in a problem solving format. Emphasis is placed on students learning and becoming familiar with the rules via a microcomputer (CAI.CMI) approach. Many teachers emphasize practice sets to give students a realistic, simulated experience. With the cost of practice sets increasing, it is becoming more costly to purchase these sets each year. Incorporating these programs into your course(s) will allow you more time to teach other aspects of the course and will also allow for individual differences in your students. One advantage of using this software is the curriculum flexibility allowed.

The teaching/testing programs can be organized and incorporated into a variety of classroom situations at either the secondary or post-secondary levels with or without practice sets.

Secondary Schools. At this level the programs could replace a single filing course that had previously incorporated a practice set. The software could be used in a rotation plan in Office Procedures, Office Machines, Secretarial/Clerical Practice, or wherever filing is currently taught. If practice sets are used in conjunction with these programs, the teacher is cautioned that adjustments will have to be made in the practice sets because they

do not utilize the same set of filing rules.

Post-secondary Schools. At this level, the programs are well suited as an individualized activity--outside of class--in any of the following courses: Office Management, Records Management, Filing, Secretarial/Clerical Procedures, or Office Machines. Students learn the rules within a 3-4 week period, at times that are determined by the student's schedule. They can also form small groups (2-3 students) to review and discuss the rules. The testing can be handled in one of three ways: (1) They can take all tests and retakes via the computer; (2) The students can be tested via a paper/pencil test with retakes on the CMI program; or (3) The students can be tested via a paper/pencil test with subsequent retakes on paper/pencil tests.

Conclusions and Summary

Almost every business education teacher should be able to take advantage of these programs. They are designed for ease of implementation into the classroom. The CAI/CMI programs utilize the computer to interact with the students, to provide immediate feedback, and to ease the recordkeeping burden of the teacher. They meet specific goals and objectives; are educationally written, designed, and programmed; and are user friendly. The programs are also cost effective in terms of student/teacher time savings. The programs include documentation for the teacher in the form of an instructor's manual--which includes a student/user handout and a "hard-copy" of three different tests to be used in paper/pencil group testing situations.

The time is right for YOU to start incorporating the computer into your business education classroom.

REFERENCES

1. The Rules For Alphabetical Filing, published by the Association of Records Managers and Administrators, 1972.

2. "New Microcomputer Teaching Competencies", Judith Lambrecht, Balance Sheet, March 1982, pg. 235.

3. "Microcomputer-Assisted Instruction: Equal May Be Better", Mellanie Herbert, Business Education Forum, February 1982, pg. 32-33.

BRIEF BIOGRAPHY

Craig A. Agneberg is an Instructor for the Division of Business Education at the University of Nebraska-Lincoln. He is a graduate student in the last year of his Ed.D. program.

THE ARMA FILING RULES

INSTRUCTIONAL PROGRAM

SYSTEM SPECIFICATIONS AND REQUIREMENTS

PROGRAM TYPE: TUTORIAL/DRILL & PRACTICE ON FILING RULES

SUBJECT AREAS: BUSINESS EDUCATION

COURSE AREAS: OFFICE PRACTICE, OFFICE PROCEDURES, RECORDS AND/OR OFFICE MANAGEMENT, AND FILING

GRADE LEVELS: 9-12 & POSTSECONDARY

PROGRAM USES: LEARNING "ARMA" FILING RULES

SYSTEM REQUIRED: APPLE II PLUS - 48K

DOS VERSION: 3.3 (OR CAN BE ADAPTED TO 3.2)

AVAILABILITY: SUMMER/FALL 1983

PROGRAMS IN THE SYSTEM

SECTION ONE: THE **INDIVIDUAL** NAME RULES ARE COVERED

SECTION TWO: DIVIDED INTO THREE PARTS AND EACH PART DEALS WITH **BUSINESS** NAMES

SECTION THREE: GIVES RULES DEALING WITH **POLITICAL/GOVERNMENTAL** AREAS

SECTION FOUR: COVERS RULES WHICH DON'T FIT INTO ANY OF THE ABOVE CATEGORIES SUCH AS **ADDRESSES, SCHOOLS, LIBRARIES, AND NEWSPAPERS**

THE COMPLETE PACKAGE OF SOFTWARE WOULD INCLUDE THE FOLLOWING:

(1) TWO DISKETTES--ONE CONTAINING THE LEARNING PROGRAM AND THE OTHER INCLUDES THE TESTING PROGRAM.

(2) AN INSTRUCTOR'S MANUAL WITH DETAILED INSTRUCTIONS FOR BOTH THE TEACHER AND THE STUDENTS.

(3) A COPY OF THE ARMA FILING RULES MANUAL DISTRIBUTED BY THE ASSOCIATION OF RECORDS MANAGERS AND ADMINISTRATORS.

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THE ARMA FILING RULES

TESTING PROGRAM

SYSTEM SPECIFICATIONS AND REQUIREMENTS

PROGRAM TYPE: INDIVIDUALIZED TESTING OVER THE FILING RULES

SUBJECT AREAS: BUSINESS EDUCATION

COURSE AREAS: OFFICE PRACTICE, OFFICE PROCEDURES, RECORDS AND/OR OFFICE MANAGEMENT, AND FILING

GRADE LEVELS: 9-12 & POSTSECONDARY

PROGRAM USES: TESTING ON THE "ARMA" FILING RULES

SYSTEM REQUIRED: APPLE II PLUS - 48K

DOS VERSION: 3.3 (OR CAN BE ADAPTED TO 3.2)

AVAILABILITY: SUMMER/FALL 1983

PROGRAMS IN THE SYSTEM

SECTION ONE: TESTS STUDENTS OVER THE ENTIRE SET OF RULES. THE TEST IS COMPLETELY RANDOM FOR EACH STUDENT AND UTILIZES A TEST BANK OF 160 DIFFERENT QUESTIONS. EACH STUDENT HAS THEIR OWN GRADE RECORD IN THE COMPUTER WHICH COMPUTES AND STORES THEIR GRADES ON EACH OF THE TESTS.

SECTION TWO: ALLOWS STUDENTS TO SEE THEIR PREVIOUS SCORES ON THE TESTING PROGRAM.

SECTION THREE: THE TEACHER SELECTIONS ARE INCLUDED IN THIS SECTION. THE SELECTIONS INCLUDE CREATING, READING, PRINTING, AND DELETING STUDENT FILES, CHANGING THE PASSWORD, AND CHANGING THE TEST QUESTIONS.

THE COMPLETE PACKAGE OF SOFTWARE WOULD INCLUDE THE FOLLOWING:

(1) TWO DISKETTES--ONE CONTAINING THE LEARNING PROGRAM AND THE OTHER INCLUDES THE TESTING PROGRAM.

(2) AN INSTRUCTOR'S MANUAL WITH DETAILED INSTRUCTIONS FOR BOTH THE TEACHER AND THE STUDENTS.

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